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DECIDING WHEN TO ADMINISTER POST-EXPOSURE RABIES PROPHYLAXIS

Frequently, doctors and medical officers of health are required to decide whether or not it is necessary to administer post-exposure rabies prophylaxis (PEP). This is a very important decision in patient care. If a patient is exposed to a rabid animal and is not given the proper medical treatment, they will die. However, PEP is costly to administer (over $1000/person) so administering it without sufficient cause can be a burden to the healthcare system.

Several factors are used to determine whether or not PEP is necessary. Is the animal available for rabies testing? Was there sufficient contact with the animal to constitute an actual exposure to the animal? If the animal escaped, was it likely to have had rabies? If it was a domestic animal, did it have a current rabies vaccination? Is the patient able to tell you whether there was an exposure?

Figure 1

Number of post-exposure prophylaxis (PEP) in Ontario compared to the numbers of rabies cases

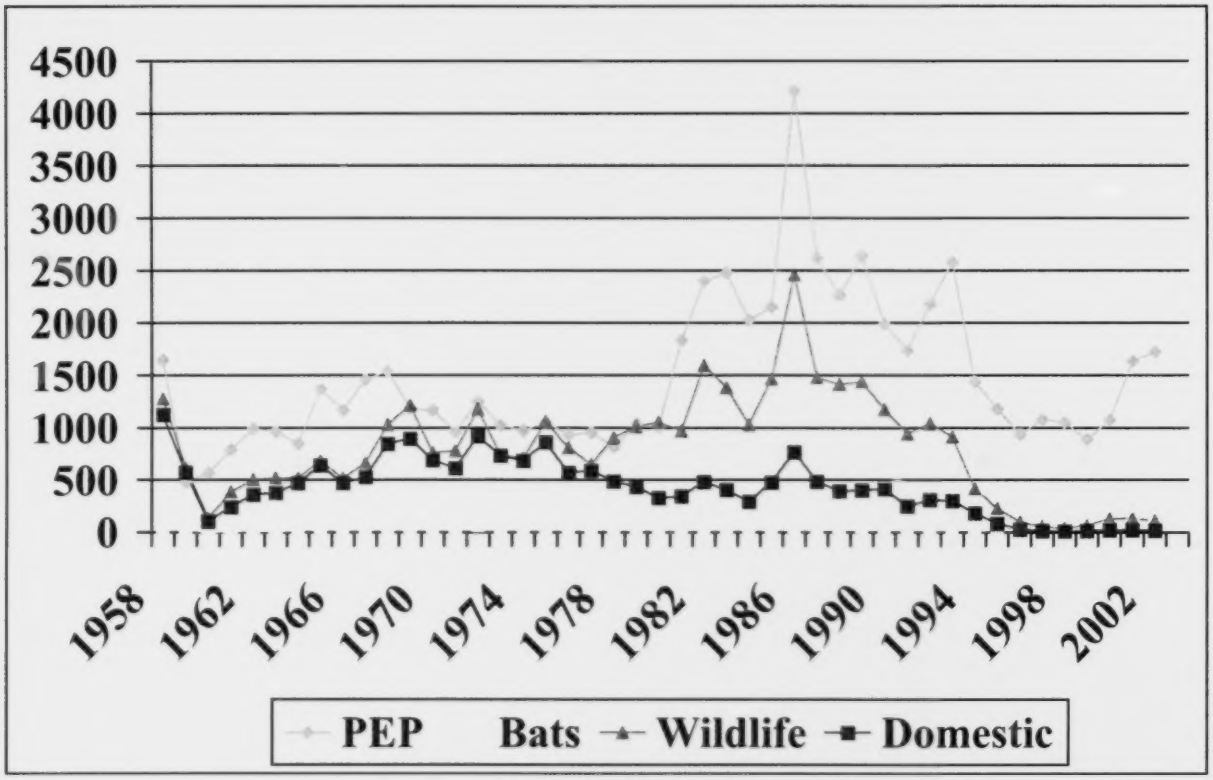


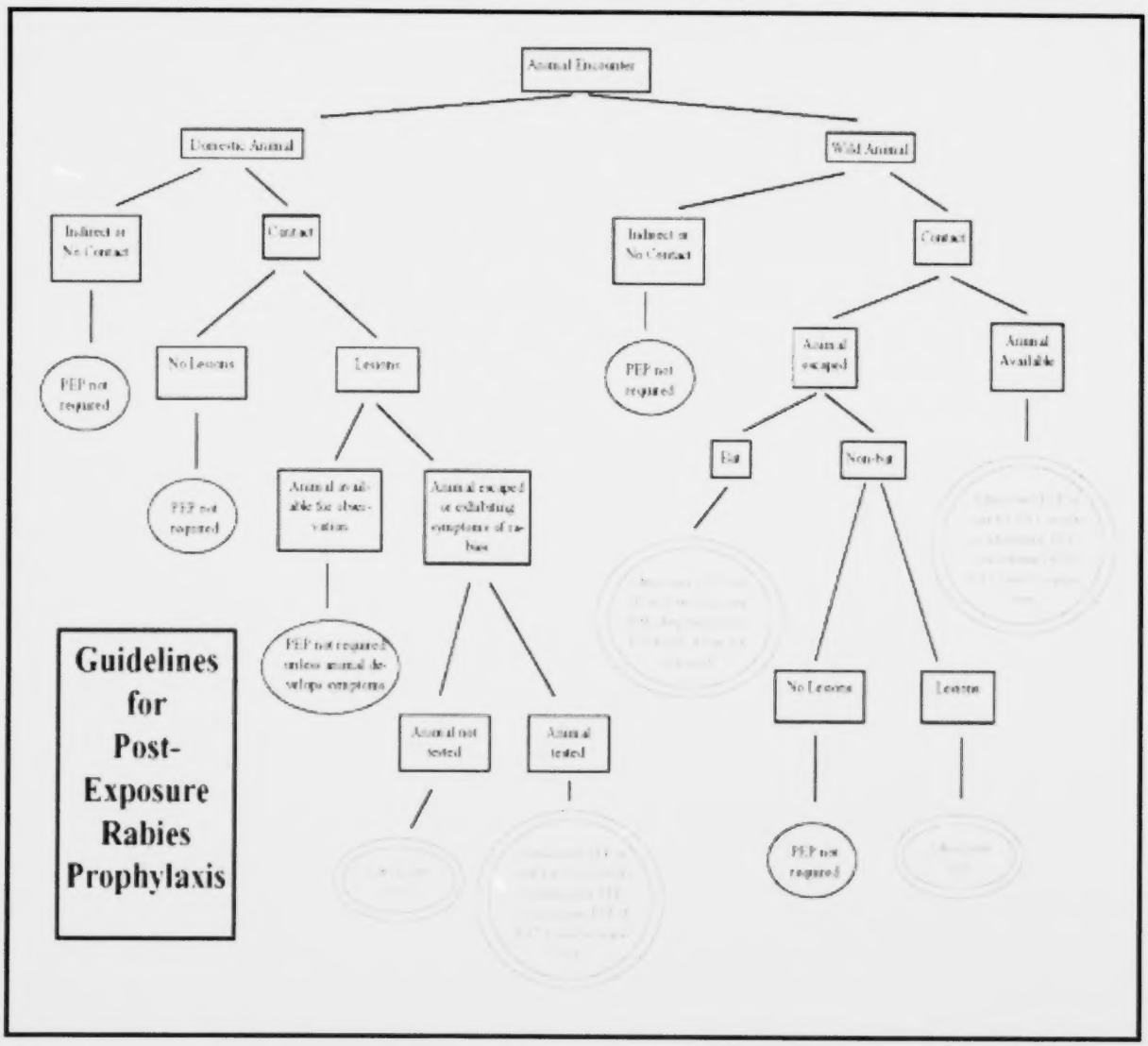
Figure 1 shows the number of people who have received PEP compared to the numbers of rabies cases in Ontario since 1958. Although the number of rabies cases per year has significantly decreased since the implementation of aerial baiting, the number of people receiving PEP has not decreased correspondingly. Some important factors contributing to this are media, public education, and animals that are not available for testing.

Before aerial baiting, rabies was very common throughout Ontario and received minimal media coverage. As the incidence of rabies has decreased, the amount of media coverage for each new case has increased. A single rabid bat can now be responsible for headline news!

In conjunction with the aerial baiting program, there has been increased efforts to educate the public to seek medical attention when exposed to wild animals or animals which are behaving abnormally (which can be indicative of rabies). Even though rabies levels are now very low, if a person is exposed to an animal that flees after the exposure, doctors frequently have to assume that the animal could have been rabid. Bats, stray animals, and wild animals frequently escape without being captured.

The chart on the following page provides a guideline on when PEP should or should not be administered. There are several factors that must be considered when deciding whether or not to administer PEP.

In many cases, domestic animals and livestock can be quarantined for 10 days. If the animal does not develop symptoms of rabies during this time, PEP is not necessary. (The rabies virus can only be transmitted for a very short period of time before the animal develops symptoms of rabies.) In some cases, the owner may be willing to sacrifice the animal to have it tested for rabies. If the fluorescent antibody test (FAT) result is negative, PEP is not necessary.



The type of contact with a potentially rabid animal is also important. The saliva of a rabid animal must come into contact with you through lesions (such as bites or scratches) or mucous membranes. Exposure to the blood, urine or feces or a rabid animal does not constitute exposure to the animal. Petting an animal also does not constitute exposure unless the fur has wet saliva on it and you have an open wound on your hand. The rabies virus is quickly killed when saliva has dried or a carcass has become dehydrated. However, if handling a dehydrated carcass, you should still wear gloves, as it may be possible to acquire other diseases or parasites from it.

With continued public education and rabies control programs, the need for PEP will hopefully decline. ❑

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Ontario Cancer Facts

October 2003

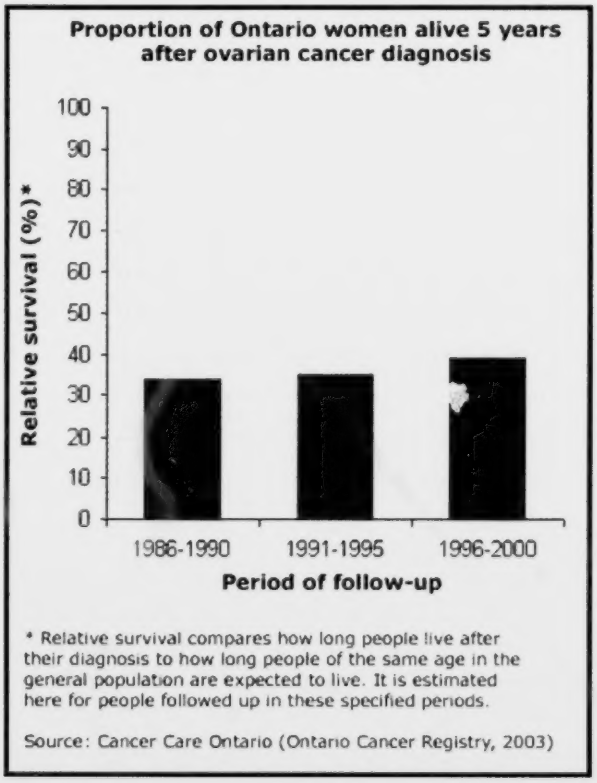
Ovarian cancer survival improving but still low

Surveillance Unit, Division of Preventive Oncology, Cancer Care Ontario

Women with ovarian cancer today have a better chance of surviving five years after diagnosis than they had in the 1980s. At that time women with cancer of the ovary were 34% as likely to be alive in five years as other women the same age in the general population. Now that number is close to 40%.

This increase in survival may be because treatment for ovarian cancer became much better during the 1990s. It may also be the result of some ovarian cancers being diagnosed earlier, when treatment has a better chance.

Survival is much lower for women with advanced disease, and better for women whose cancer is still at an early stage. Most ovarian cancers are diagnosed at an advanced stage.



* Relative survival compares how long people live after their diagnosis to how long people of the same age in the general population are expected to live. It is estimated here for people followed up in these specified periods.

Source: Cancer Care Ontario (Ontario Cancer Registry, 2003)

It is hard to detect cancer of the ovary early, because the symptoms are similar to symptoms caused by more common conditions. Survival from ovarian cancer is still low compared to many other types of cancer.

Researchers are working to improve tests for finding cancer of the ovary early.
For more information, talk to your health care provider or call Cancer Information Service (1 888 939-3333).

cancer care ontario

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CELLULAR TELEPHONE USE WHILE DRIVING: CURRENT ISSUES & RECOMMENDATIONS

Introduction

Cellular telephones have become increasingly popular over the last decade and there is no sign that this trend is likely to abate. Talking on a cellular phone while driving has become commonplace since we rely on our cellular phone to keep in touch with the office, family, and friends. This has led to a debate on whether or not drivers using cellular phones have become such hazards on the road that the use of cellular phones should be banned in all but emergency situations. It is important for drivers of all ages to be cognizant of the risks inherent in engaging in a conversation on a cellular phone while they are driving. This article presents an overview of the research, legislation, and recommendations on the use of a cellular phone while driving.

Research Findings

The research evidence on cellular phones and driving consists of epidemiological research, studies of driver behaviour in simulated driving environments, and studies of drivers' performance on the road. Epidemiological research tracks the exposure of the public to certain events deemed to be risks, and then develops models of how that exposure translates into increased incidence and prevalence of negative outcomes. In the case of distracted driving, the risk is the presence of the distracters and the negative outcomes are collisions and ensuing injuries or deaths.

According to a 2001 study conducted by the AAA Foundation for Traffic Safety, distractions are involved in about eight per cent of all collisions. The top three distractions discovered in this study were: someone or something outside the car (30 per cent of cases), adjusting the radio or CD player (12 per cent of cases), and being distracted by another occupant of the car (11 per cent of cases). Cellular phone use ranked eighth on this list of driver distractions, accounting for two per cent of collisions attributable to distraction, or 0.16 per cent of all collisions. [1]

Similar results have been found in the United Kingdom. It has been estimated that distraction due to sources inside the vehicle contribute to about two per cent of collisions - the most frequent distractions being passengers, followed by entertainment systems, and then eating and drinking.[2]

In terms of estimating relative risk, a famous 1997 Canadian study by Redelmeier & Tibshirani compared mobile phone records with police collision reports for property damage only, in non-injury collisions. They found a four-fold increased collision risk associated with cellular phone use above and beyond other distractions.[3]

A more recent study in 2001 by Laberge-Nadeau et al, which included collisions resulting in injury, yielded a somewhat more conservative estimate of approximately 1.4 times the relative collision risk among average cellular phone users. This estimate increased to 2.3 times the risk for frequent users and decreased to non-significance when other factors such as kilometers driven and driving habits were incorporated in the model. Those who made minimal use of a cellular phone had similar collision rates as non-users.[4] It is important to note that neither of the aforementioned studies found a significant advantage for hands-free cellular phones over hand held models.

Studies of drivers in simulators have demonstrated that reaction times for braking and generally responding to events on the road, are increased for people who are simultaneously engaged in a conversation using a cellular phone.[5] The dominant theory explaining these results is that cellular phones can divert cognitive attentional resources from the task of driving. The key to the distraction seems to be the active participation in conversation, since passive listening to music or news does not have an effect.[6]

Studies of drivers in real cars have yielded similar though often less significant results.[7] This suggests that drivers may approach the risks of driving in a real-world context differently from that in a simulator. Nonetheless, while being distracted by a cellular phone conversation, drivers demonstrate delayed adaptation to speed changes in a car they are following[8], increased mental work load, [9,10] harder braking[11], and more central visual fixation with loss of attention to objects in the periphery and to mirrors and instruments.[11] Typically, the amount of impairment increases as the demands of the secondary task, such as a cellular phone conversation, increases.[10]

It is important to note that it is the distraction of the conversation, not the physical operation of the cellular phone, that seems to be the cause of the decreased

driving performance.[7] In fact, there are studies that have found similar results for conversations with passengers as on a cellular phone. [9,10] Some studies have even simulated cellular phone conversations by using in-car questioners.[12]

There is some evidence that drivers in a real-world context use strategies to cope with the extra attentional demands of talking on a cellular phone while driving. These include slowing down while engaged with the distracting task,[9] reduced swerving, and learning to better manage two tasks at once over time.[8] However, while there is evidence that under familiar circumstances drivers may be able to manage sharing their attentional resources between the road and a cellular phone conversation, in a novel situation such as a sudden obstacle or pedestrian in the road, driving performance is definitely impaired.[13]

In general, there appears to be little doubt that one's ability to optimally operate a motor vehicle decreases while talking on a cellular phone. The literature strongly suggests that this impairment is not a function of manually operating a hand-held cellular phone, but the result of the cognitive demands of carrying on a conversation with someone outside the car. While there is a growing body of evidence to suggest that cellular phones are an added distraction for drivers, there is much less evidence pointing to a real-life increase in serious injuries or fatalities resulting from cellular phone use by drivers.

That being said, there have been a few documented and well-publicized examples of fatalities linked to the use of a cellular phone while driving. At least one highly publicized fatal collision in Ontario has been directly linked to cellular phone use. In May 2001, a man was driving with his young daughter in Pickering, Ontario while the two shared a cellular phone to talk with the girl's mother. The man failed to notice a train bearing down on his truck at a level crossing - until it was too late. Both he and his daughter were killed instantly. The inquest jury suggested that the province consider a ban on cellular phone use while driving.

Legislation

At least 14 countries have banned drivers from using cellular phones. These countries include Australia, Austria, Belgium, Brazil, Britain, Chile, Finland, Israel, Italy, Japan, Portugal, Singapore, South Africa and Spain. However, a number of them have exempted hands-free units from their bans. New York state became the first state in the U.S. to ban the use of hand-held cellular phones by drivers, effective November 1, 2001.[14] On April 1, 2003, Newfoundland and Labrador became the first jurisdiction in Canada to ban the use of hand-held cellular phones while driving, except in the case of an emergency. A number of other provinces are considering following suit, including Ontario, where a private-member's bill is working its way through the Legislature. No evidence is available yet of a reduced number of collisions, injuries or fatalities, from jurisdictions that have banned the use of cellular phones while driving. Canadians – many of who admit to using cellular phones while driving - believe drivers using cellular phones pose a serious threat to road safety. Nearly half of those surveyed would support legislated regulations on the use of cellular phones while driving.[15]

Recommendations

Both the Ontario Ministry of Transportation and Transport Canada currently recommend that drivers who wish to use their cellular phones should safely pull over to the side of the road first. Additional recommendations on the use of cellular phones while driving are listed below:

- Ask a passenger in the car to take the call.
- Let a cellular call go to voice mail when you are driving.
- "Be alert to situations on the road where a cell phone's radio frequency and electronics may be potentially harmful such as: construction zones where blasting is occurring, or at gas stations/fuelling areas." [16]
- If you need to make or take calls on your cellular phone in the car let someone else drive.
- If it is absolutely essential that you must make or take a cellular call while driving, only use the cellular phone if it is safe to do so, use speed dial options, alert the caller that you are driving, and keep your calls short and factual.

The Ontario Ministry of Transportation also notes on its Web site that the law permits police to charge drivers with careless driving if they do not pay full attention to the driving task. A driver convicted of careless driving will receive six demerit points, fines of up to $1,000

and/or a jail term of six months. In some cases the driver's license may be suspended for up to two years.[16]

Conclusion

The evidence strongly suggests that talking on a cellular phone while driving increases your risk of a collision. It is not yet clear to what extent the risk of injury is increased and whether it warrants a legislated ban.

Some argue that the benefits of using cellular phones must also be taken into account when weighing legislative action. For example, the *Harvard Center for Risk Analysis* accepts that cellular phone use while driving "poses a risk to the driver, to other motorists, and to pedestrians."[17] However, they suggest that research to date indicates that the risks appear to be small when set against the potential benefits (peace of mind, contacting emergency services, expanding productive time) and do not warrant a legislative ban. The *Center* also notes that while cellular phone use grew 17- fold between 1990 and 1998, U.S. traffic fatalities continued to decline steadily.[17]

Drivers need to be aware that their ability to give full attention to the road is decreased when using a cellular phone. Ideally, drivers should avoid engaging in cellular phone conversations while driving. Drivers who choose to use their cellular phones while on the road should: ensure traffic conditions permit it; drive in the slow lane; and limit their conversations to short ones that are not cognitively or emotionally challenging.

It is also important to remember that the use of a cellular phone is one of a myriad of factors that can increase a driver's risk of a collision. The use of alcohol and/or drugs, eating or drinking, driving while fatigued, driver inexperience, or driving during inclement weather, can all increase the risk of being involved in a collision.

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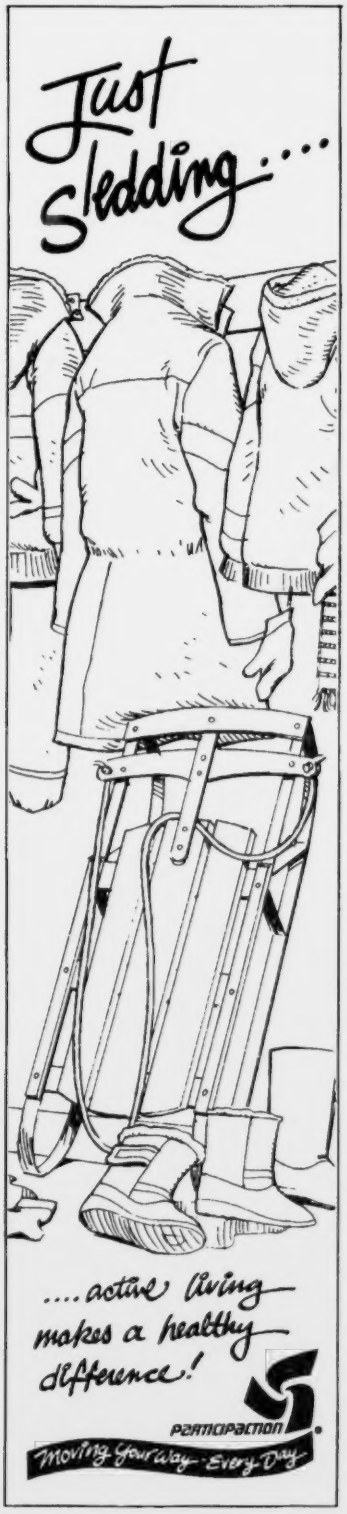

Communiqué
Public Health Research, Education and Development Program

MIDDLESEX-LONDON HEALTH UNIT
Middlesex London Teaching Health Units

MEASURING CHILDHOOD OBESITY: A PUBLIC HEALTH PERSPECTIVE

Childhood obesity has become a public health challenge in Canada (1). Obesity in children increases risks of Type 2 diabetes, hyperlipidemia, and hypertension (2-4). Another major concern is that obese children tend to become obese adults (5). Given the risk for the development of severe health consequence and the heavy health care burden, primary prevention targeting children is key to combat this health problem(6). Measuring childhood obesity is a necessity for the planning and evaluation of obesity intervention/prevention programs. This paper provides a public health perspective and describes the current definitions of obesity in children, measuring methods and criteria, as well as venues to collect obesity prevalence data.

DEFINITIONS

The term 'overweight' refers to excess weight in relation to height, while 'obesity' refers to an excessive amount of body fat or adipose tissue in relation to lean body mass. Measuring body fat accurately is difficult. The ideal definition of obesity, based on percent body fat, is impracticable for epidemiological and clinical use (7). Although the word **overweight** may connote a milder degree of excess fat than does **obesity**, no defined criteria exist to make this distinction. The terms are generally used interchangeably in the literature (8). Defining overweight or obesity in children and adolescents is complicated by the normal growth processes, pubertal development and body composition changes. No standard definition exists for child or adolescent obesity.

Methods and criteria

Methods to classify obesity include skinfold thickness measures, weight-for-height percentiles, and Body Mass Index (BMI). BMI is currently the most acceptable and practical measure.

Skinfold thickness

Skinfold thickness is a measure of the subcutaneous fat at specific body sites. The World Health Organization (WHO) recommends associating measurements of skinfold thickness with BMI (9). The references for two skinfold sites, i.e. subscapular and triceps, in conjunction with the BMI reference is suggested in defining overweight and obesity for youth aged 11 to 21 years (9).

Accurate measurements of skinfold thickness depend on the skill of the examiner and may vary widely when measured by different examiners (10). The low measurement reliability limits the technique for field surveys (11). These WHO recommendations are not widely used in large-scale epidemiology studies.

Weight-for-height percentiles

Weight-for-height charts are another measure used to determine if a child is overweight. These charts, which have been used for decades, usually give a range of acceptable weights for a child of a given height. Currently, WHO still recommends weight-for-height percentiles for classification of overweight in children aged 0 to 10 years (9). Overweight is defined as having a weight-for-height above the 95th percentile on the WHO/National Centre for Health Statistics (NCHS) reference curves (9).

The weight-for-height index, however, only takes into account the relationship of body weight for a given height and disregards age. As children's body composition and body build change substantially with age, the use of a single weight-for-height index is an inaccurate measure of body fat in childhood.

Body Mass Index (BMI)

Body Mass Index (BMI) has been adopted as a measure of childhood obesity since the 1990s. Several countries, i.e. the United States, the United Kingdom, Germany, Italy, Australia, and New Zealand have developed gender specific BMI-for-age standards for children (12-18). Canada has not yet established its own standards for children (19). The Canadian Pediatric and Family Physician Society, however, endorses the use of the recently released BMI reference by the Centers for Disease Control and Prevention (CDC) in the United States (12;20).

Why BMI? Overall, BMI is a convenient way of measuring overweight and obesity in general practice. Since obesity is an excess of body fat, the ideal indicator in populations should be reliable and valid in reflecting body fat content (11-12). Using BMI as a measure of overweight and obesity in children is based on two factors. First, the high reliability of measurements of height and weight makes the calculation of BMI applicable in clinical practices and population surveys (11-12). Secondly, BMI is a valid index of fatness. BMI is significantly correlated with fatness in children and adolescence as determined by laboratory measures (21-23).

Compared to the weight-for-height index, the advantage of BMI-for-age references as a measure of overweight in children is that age is taken into account. This is very crucial since a child's body build and body composition change with age (9).

BMI cutoff values: When defining overweight and obesity, the cut-off points for BMI-for-age are arbitrary in children. For adults, BMI criteria have been based on mortality or mortality outcome research, however no risk-based criteria has been established for youth, as it is difficult to link youth weight status to chronic disease outcomes (9;12). Adult BMI criteria utilize a single cutoff value for both sexes and all ages, which is inappropriate for children and adolescents who are experiencing rapid growth and body composition changes. In childhood, BMI changes substantially with age, falling during the preschool years and rising again into adulthood (11-12). For this reason, BMI needs to be assessed using age-specific reference curves. Gender-specific values are also needed for adolescents because of differences in body composition during puberty. During puberty, males experience an increase in lean body mass (muscle and bone mass) and a decrease in the amount of body fat, whereas females develop greater fat stores (11-12).

The United Kingdom, Australia, and the United States use the 85th and 95th percentiles to mark the transition from "normal weight" to "overweight" and then "obesity" (12-18), while the French use the 97th percentile to classify children as 'obese'. The International Obesity Task Force (IOTF), however, incorporated a novel approach to setting the childhood percentile for overweight and obesity based on adult morbidity cut-off points. Percentiles at 18 years of year were chosen to match the adult BMI cutoffs of 25 and 30 (24).

Which BMI-for-age reference should be used?

Currently, three sets of BMI reference might be useful for children in North America (9; 12; 24-25):

1. **The WHO recommended BMI reference**: The earliest BMI standards were established for children aged 6 to 19 years in early 1990s. Must et al (25) developed a set of BMI references based on anthropometric data from the United States' first National Health and Nutrition Examination Survey (NHANES I, 1971-1974). In the absence of widely accepted international anthropometric references for adolescents, these BMI references were recommended by a WHO Expert Committee in 1995 (9).
2. **The IOTF recommended BMI reference**: On behalf of the International Obesity Task Force (IOTF), Cole et al (24) amalgamated BMI-for-age data from several nationally representative studies including those from the United States, Brazil, Great Britain, Hong Kong, the Netherlands, and Singapore. This set of BMI references covers the age range of 2 to 18 years. Children's BMI curves were artificially extrapolated to match the adult cut-off values for overweight and obesity. Children are defined as overweight with a BMI percentile corresponding to 25 and obese with a BMI percentile corresponding to 30 at the age of 18 years. It is promoted that this set of BMI standards be applicable for international use.
3. **The Centers for Disease Control and Prevention (CDC)-US BMI reference**: CDC released BMI-for-age references for children aged 2 - 20 years in 2000 (12). The gender-and age-specific BMI percentiles were developed based on data from National Health Examination Survey (NHES) and National Health and Nutrition Examination Study (NHANES) before the 1980s, prior to obesity being recognized as an epidemic. The data from these national surveys closely reflects the racial/ethnic diversity in the United States. CDC defines overweight in children as a BMI greater than the 95th percentile for age. Children between the 85th and 95th percentile are considered being at risk of becoming overweight. For practical use, CDC has developed a computer software 'Epi Info' (version 3), which allows for easy calculation of BMI percentiles against the standards. From a statistical standpoint, this allows easy descriptions of the population mean and distribution

patterns of BMI percentile, as well as estimation of overweight prevalence of a target sample (26). The software is free for downloading from the CDC website: http://www.cdc.gov/epiinfo/.

Which reference is practical to be used in Canada?

Although recommended by WHO, the Must et al BMI references are the least used one amongst the three existing BMI references (9;25). Both the Cole's and CDC's BMI references are being used in Canada by different researchers (1;27-28). One may wonder what are the similarities and differences between the Cole and CDC BMI references. In terms of similarity, both references are based on statistical criteria and incorporate arbitrary assumptions. The differences include the terminology being used, age range covered and a slight difference in BMI cut-off values (Table 1). Flegal et al (29) compared the difference of the BMI cut-off values and their impact on estimating obesity prevalence rates using data from national surveys in US. In this study, Cole et al BMI cutoffs equivalent to a BMI of 25 were compared with the 85th percentile from the CDC reference; the values equivalent to a BMI of 30 were compared with the 95th percentile. The two methods generated similar but not identical results. The reference values of Cole et al generate lower estimates than did the CDC BMI reference for young children, but higher estimates for older children. Fegal et al (29) suggested that the differences between methods were related to differences in data sets, smoothing methods, and theoretical approaches.

Currently, Health Canada does not endorse either of these BMI references. The College of Family Physicians of Canada and The Canadian Paediatric Society, however, have endorsed the use of the CDC BMI references or classification of childhood obesity in primary health care settings (20). From a practical standpoint, the CDC BMI standard is easier to use because the availability of the free software Epi Info Version 3 for the calculation of BMI percentiles against the standard. Overall, we should bear in mind that both references are developed based on statistical criteria and incorporate arbitrary assumptions. With awareness of the possible limitations, either reference should be used with caution (29).

HOW TO MEASURE BMI- SOME PRACTICAL CONSIDERATIONS

Taking body weight and height measurements seems simple. In fact, some practical considerations must be taken into account when measuring children's body weights and heights. To ensure accuracy, heights and weights must be measured by trained personnel with appropriate equipment. Measurement should be repeated and the average of two readings used. Because of the sensitivity of body image, protective measures must be in place to avoid any harm that may be caused by taking BMI measurements. To avoid harming children's self-esteem, measurements must take place in a private room to respect the privacy of the child being measured. The measurer should not tell the child his/her weight or what he/she should weigh. If children keep asking, the measurers could state that people are born in different shapes and emphasize the importance of healthy eating and active living. Researchers at the University of California have developed a guide for anthropometric measurement based on these principles. The 'Guidelines for Collecting Heights and Weights on Children and Adolescents in School Settings' is free for downloading from http://www.cnr.berkeley.edu/cwh/PDFs/bw_weighing.pdf.

Table 1

Comparison of the Cole and CDC BMI references

	Cole et al BMI References	CDC BMI References
Age range	2-18 yrs	2-20 yrs
Terminology	**Overweight**: BMI equivalent to 25 at age of 18 **Obesity:** BMI equivalent to 30 at age of 18	**At risk of overweight**: BMI 85th - 95th centile **Overweight:** >=95th centile

POSSIBLE VENUES FOR COLLECTING BMI DATA

Despite the increasing national and local concern over the rising prevalence of childhood obesity, there is a lack of measured BMI data for Canadian children since the 1970's (30). Recent national surveys obtained children's BMI data based on parents' or children's reported body weights and heights (1;27;31), which may not be as accurate as actually taking measurements. Sensitivities with respect to body image have been a major barrier to assessing weight status.

From a public health standpoint, population-based measured BMI data are essential to accurately report and monitor obesity prevalence trends in children. Possible venues to collect such measured BMI data include schools, community events, immunization clinics and family doctor's offices etc.

Collecting new BMI data in school settings

School is a good venue to obtain BMI data from school-age children. In Canada, a majority of children attend school except those who study in home-based programs. In order to obtain a representative sample of school-age children, surveys should target children in four school boards;; i.e., Public, Public French, Catholic, and Catholic French. From an ethics perspective, a key step to collecting BMI data is to obtain parental consent. He (28) found that when an active consent method (i.e., consent signed by parents) was used, approximately 50-60% of parents gave permission for measuring their children's body weights and heights.

Collecting new BMI data in pre-school vaccination clinic settings

Preschool vaccination clinics seem a promising route to collect measured BMI data from preschoolers (32). Flynn et al (32) have tested the feasibility of collecting BMI data in such settings. Public health nurses were trained to take body weight and height measures as part of preschool vaccinations and assessments in clinics. BMI data were entered into a database and centrally analyzed. Flynn et al concluded that 'this approach to identify overweight children appeared satisfactory to parents in an environment with limited resources for treatment of childhood overweight' (32).

Collecting new BMI data in community settings:

Researchers in Calgary, Alberta have piloted a community-based data collection model with little success (33). Children aged 7 to 13 years in summer camps were targeted. The study showed that only 15% of parents gave permission for their children to participate. The main reasons for not allowing children's participation were lack of time and parents concern about a negative impact on body image (33).

Collecting existing BMI data in primary healthcare settings

Routine growth monitoring data, collected in primary health care settings, have the potential to be a valid data source for tracking obesity prevalence. Primary health care providers in Canada have a mandate to routinely assess and monitor the growth of every child from birth to six years of age. Anthropometrical measurements, e.g., body weights and heights, are periodically charted in family physicians' offices (34). Periodic extraction of routine growth monitoring data enables the tracking of the prevalence of childhood obesity at the regional, provincial or national level. He & Sutton (34) recently completed a retrospective study to test the feasibility of using routine growth data from physician's offices in tracking obesity prevalence in children aged 2 to 6 years. Over 1300 growth charts in physicians' offices were reviewed. It was shown that data from routine growth monitoring in primary care settings has great potential to be used as a population-based data source to track the prevalence of obesity in young children.

SUMMARY

Overweight and obesity in Canadian children are escalating public health concerns. There is a lack of clear definitions, consistent measures and criteria for the classification of overweight and obesity for Canadian children. BMI is currently the most acceptable and practical means for measuring childhood overweight and obesity. Although three BMI references are available, only the Cole's and CDC's BMI references are being used by different researchers in Canada. In addition, there is also a lack of measured data that accurately reflect the current prevalence rates of overweight and obesity in Canadian children. Public health professionals should make efforts to obtain accurate BMI data to monitor the trends of childhood obesity at local, provincial and federal levels. Possible venues to obtain such data include schools, preschool vaccination clinics, physicians' offices and community events.

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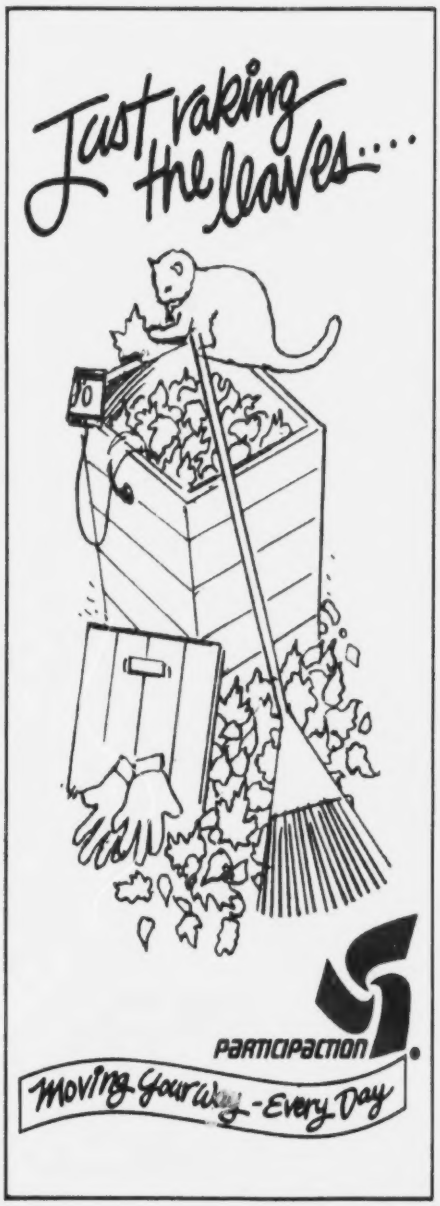

Summary of Reportable Diseases in Ontario - July, 2003

Health Units by Region	Population 2001	AIDS	Campylo.	Chicken-pox	Chlamydia	Enceph./ Meningitis	GAS	Gonorrhea
Algoma	117,200				18	2	1	2
North Bay	92,950		3	61	14			
Northwestern	75,085		2	4	29	1		2
Porcupine	84,755			12	20			
Sudbury	188,365		3	34	26	2	1	2
Thunder Bay	152,800		2		22		1	1
Timiskaming	35,335		1		9			
Total - Northern	**746,490**		**11**	**111**	**138**	**5**	**3**	**7**
Eastern Ontario	185,975		10	1	13			2
Hastings & Prince Edward	150,805		6		20			1
Kingston, Frontenac & Lenno	178,065				19	2	1	
Leeds, Grenville & Lanark	159,100		2					
Ottawa	774,070		35	68	79	3	2	22
Renfrew	96,465		3	5	3	1		
Total - Eastern	**1,544,480**		**56**	**74**	**134**	**6**	**3**	**25**
Durham	506,900	1	24	34	63	4	2	10
Haliburton-Kawartha	161,770		9		8			2
Muskoka-Parry Sound	80,500		2					
Peel	988,950		53	114	144			30
Peterborough	125,860		7		14			1
Simcoe	377,030		5		5			
Toronto - total	2,481,495	2	163	93	550	11	7	212
North			*32*	*11*	*122*	*2*	*1*	*45*
South		*2*	*65*	*26*	*210*	*5*	*3*	*115*
East			*38*	*48*	*146*	*1*	*2*	*25*
West			*28*	*8*	*72*	*3*	*1*	*27*
York	728,980		62	19	42	2	2	5
Total - Central East	**5,451,485**	**3**	**325**	**260**	**826**	**17**	**11**	**260**
Grey Bruce	152,380		8	1	16	2	3	
Elgin-St. Thomas	81,560		4	1	8			
Huron	59,695		6		4			1
Chatham-Kent	107,705		1	17	9			
Lambton	124,295		2					
Middlesex-London	403,180		14		45			12
Oxford	99,265		9		6			
Perth	73,680		10	2	11			
Windsor-Essex	374,985		26	8	35	4	1	2
Total - Southwest	**1,476,745**		**80**	**29**	**134**	**6**	**4**	**15**
Brant	118,085		3	17	16		2	
Haldimand-Norfolk	104,580		9	2	5			3
Halton	375,230		20		19			1
Hamilton	490,270	1	15	4	76			13
Niagara	410,570		26		40			6
Waterloo	438,515		27		47			5
Wellington-Dufferin-Guelph	238,315		11	10	13	1		1
Total - Central West	**2,175,565**	**1**	**111**	**33**	**216**	**1**	**2**	**29**
July 2003	**11,394,765**	**4**	**583**	**507**	**1,448**	**35**	**23**	**336**
*** Total YTD 2003**	**-**	**53**	**2,017**	**9,954**	**10,313**	**209**	**288**	**1,793**
*** Total YTD 2002**	**-**	**72**	**2,533**	**11,525**	**10,457**	**251**	**240**	**1,698**

The Toronto City regions above are now defined as: North - former North York; South - former City of Toronto; West - former Etobicoke and City of York; East - former Scarborough and East York

** Infectious Syphilis cases include 'Primary, Secondary and Early Latent' staging effective January 1, 2003

* Adjusted for deletions and late reports.

Summary of Reportable Diseases in Ontario - July, 2003

Health Units by Region	Population 2001	Hepatitis A	Hepatitis B	Hepatitis C	Hib	Influenza	Measles	Meningo-coccal
Algoma	117,200			3				
North Bay	92,950			1				
Northwestern	75,085			1				
Porcupine	84,755			3				
Sudbury	188,365		2	4				
Thunder Bay	152,800	1	1	7				
Timiskaming	35,335							
Total - Northern	**746,490**	**1**	**3**	**19**				
Eastern Ontario	185,975			5	1			
Hastings & Prince Edward	150,805			1				
Kingston, Frontenac & Lennox	178,065			1				
Leeds, Grenville & Lanark	159,100			2				1
Ottawa	774,070			28				1
Renfrew	96,465							
Total- Eastern	**1,544,480**			**37**	**1**			**2**
Durham	506,900							
Haliburton-Kawartha	161,770			11				
Muskoka-Parry Sound	80,500							
Peel	988,950	1	1	12				
Peterborough	125,860		1	6				
Simcoe	377,030			6				
Toronto - total	2,481,495	1	2	114	2	1		
North			*1*	*25*	*1*	*1*		
South				*48*	*1*			
East		*1*	*1*	*25*				
West				*16*				
York	728,980	3		14				
Total - Central East	**5,451,485**	**5**	**4**	**163**	**2**	**1**		
Grey Bruce	152,380			3				
Elgin-St. Thomas	81,560			4				
Huron	59,695							
Chatham-Kent	107,705			5				
Lambton	124,295							
Middlesex-London	403,180			10				
Oxford	99,265							
Perth	73,680			1				
Windsor-Essex	374,985	4		5				
Total - Southwest	**1,476,745**	**4**		**28**				
Brant	118,085	1		5				
Haldimand-Norfolk	104,580			1				
Halton	375,230			6				
Hamilton	490,270	4		19				
Niagara	410,570			9				1
Waterloo	438,515			8				1
Wellington-Dufferin-Guelph	238,315	1		2				
Total - Central West	**2,175,565**	**6**		**50**				**2**
July 2003	**11,394,765**	**16**	**7**	**297**	**3**	**1**		**4**
*** Total YTD 2003**	**-**	**74**	**64**	**2,764**	**9**	**449**	**9**	**31**
*** Total YTD 2002**	**-**	**65**	**79**	**3,132**	**2**	**2,172**		**34**

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** Infectious Syphilis cases include 'Primary, Secondary and Early Latent' staging effective January 1, 2003

* Adjusted for deletions and late reports.

Summary of Reportable Diseases in Ontario - July, 2003

Health Units by Region	Population 2001	Mumps	Pertussis	Rubella	Salmon.	Shigellosis	Syphilis Infectious**	TB	VTEC
Algoma	117,200		2						
North Bay	92,950		1		1				
Northwestern	75,085				2				
Porcupine	84,755								
Sudbury	188,365		3		2				
Thunder Bay	152,800				1			1	
Timiskaming	35,335								
Total - Northern	**746,490**		**6**		**6**			**1**	
Eastern Ontario	185,975				3	1			
Hastings & Prince Edward	150,805				9				1
Kingston, Frontenac & Lennox	178,065						1		
Leeds, Grenville & Lanark	159,100								
Ottawa	774,070		6		13	1	1	4	8
Renfrew	96,465				3				1
Total- Eastern	**1,544,480**		**6**		**28**	**2**	**2**	**4**	**10**
Durham	506,900		4		13				
Haliburton-Kawartha	161,770				4			1	
Muskoka-Parry Sound	80,500								
Peel	988,950		1		13	1	1	4	3
Peterborough	125,860				1				
Simcoe	377,030				3				
Toronto - total	2,481,495	1	1	1	61	10	30	17	10
North					*24*	*2*	*1*	*3*	
South		*1*	*1*		*19*	*6*	*28*	*6*	*5*
East				*1*	*9*	*2*		*2*	*1*
West					*9*		*1*	*6*	*4*
York	728,980		2		23	2		2	10
Total - Central East	**5,451,485**	**1**	**8**	**1**	**118**	**13**	**31**	**24**	**23**
Grey Bruce	152,380				3				2
Elgin-St. Thomas	81,560		1						
Huron	59,695		1		1				
Chatham-Kent	107,705				1				
Lambton	124,295				1				
Middlesex-London	403,180		2		5	1	1		
Oxford	99,265				2				
Perth	73,680				1	1			3
Windsor-Essex	374,985		1		10				1
Total - Southwest	**1,476,745**		**5**		**24**	**2**	**1**		**6**
Brant	118,085				2				
Haldimand-Norfolk	104,580		2		1	1			1
Halton	375,230		2		7	2			14
Hamilton	490,270				7	1			2
Niagara	410,570				11	1			1
Waterloo	438,515				5	2		1	1
Wellington-Dufferin-Guelph	238,315				2				1
Total - Central West	**2,175,565**		**4**		**35**	**7**		**1**	**20**
July 2003	**11,394,765**	**1**	**29**	**1**	**211**	**24**	**34**	**30**	**59**
*** Total YTD 2003**	**-**	**10**	**169**	**6**	**1,074**	**163**	**199**	**333**	**310**
*** Total YTD 2002**	**-**	**9**	**257**	**2**	**1,302**	**708**	**88**	**452**	**174**

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** Infectious Syphilis cases include 'Primary, Secondary and Early Latent' staging effective January 1, 2003

* Adjusted for deletions and late reports.

Summary of Reportable Diseases

2nd Quarter, 2003

Ministry of Health and Long-Term Care

Ontario

Summary of Reportable Diseases in Ontario - 2nd Quarter 2003

Health Units by Region	Population 2001	AIDS	Campylo.	Chicken-pox	Chlamydia	Enceph./ Meningitis	GAS	Gonorrhea
Algoma	117,200			25	43		2	4
North Bay	92,950		1	289	35			
Northwestern	75,085		2	54	53		5	4
Porcupine	84,755		5	97	36			1
Sudbury	188,365		4	291	77		2	5
Thunder Bay	152,800		6	19	82		2	6
Timiskaming	35,335		2	8	13			
Total - Northern	**746,490**		**20**	**783**	**339**		**11**	**20**
Eastern Ontario	185,975		8	24	35		2	2
Hastings & Prince Edward	150,805	1	5	12	48		1	2
Kingston, Frontenac & Lennox	178,065		3	3	62	2		2
Leeds, Grenville & Lanark	159,100		3	4		1	3	
Ottawa	774,070	1	43	657	279	5	12	29
Renfrew	96,465		4	5	19		2	
Total- Eastern	**1,544,480**	**2**	**66**	**705**	**443**	**8**	**20**	**35**
Durham	506,900	2	26	1,257	163	4	9	19
Haliburton-Kawartha	161,770		17		29		3	2
Muskoka-Parry Sound	80,500	2	2	17	18	1		
Peel	988,950	3	68	1,349	436	15	6	87
Peterborough	125,860		10	102	41	3	6	
Simcoe	377,030	1	8	65	110	2	3	4
Toronto - total	2,481,495	30	226	2,097	1,472	24	28	417
North		*2*	*52*	*428*	*305*	*6*	*8*	*50*
South		*24*	*88*	*377*	*528*	*9*	*9*	*206*
East		*2*	*44*	*896*	*402*	*3*	*7*	*81*
West		*2*	*42*	*396*	*237*	*6*	*4*	*80*
York	728,980		62	401	154	12	1	9
Total - Central East	**5,451,485**	**38**	**419**		**2,423**	**61**	**56**	**538**
Grey Bruce	152,380		6	70	37		2	1
Elgin-St. Thomas	81,560		1	102	25	1		
Huron	59,695		7	22	9	1	2	2
Chatham-Kent	107,705		6	136	25		1	3
Lambton	124,295		4			1		
Middlesex-London	403,180	2	19		130	4	4	24
Oxford	99,265		6		18	2		3
Perth	73,680		9	70	14	2	1	
Windsor-Essex	374,985		30	549	124	3	3	9
Total - Southwest	**1,476,745**	**2**	**88**	**949**	**382**	**14**	**13**	**42**
Brant	118,085	1	3	421	35	1	2	3
Haldimand-Norfolk	104,580		5	56	24		1	1
Halton	375,230		35	33	62	3	3	10
Hamilton	490,270	3	21	346	231	1	7	29
Niagara	410,570	1	35	700	119	1	6	27
Waterloo	438,515	2	39	36	143	2	6	19
Wellington-Dufferin-Guelph	238,315		23	130	60	1	1	4
Total - Central West	**2,175,565**	**7**	**161**	**1,722**	**674**	**9**	**26**	**93**
2nd Quarter 2003	**11,394,765**	**49**	**754**	**9,447**	**4,261**	**92**	**126**	**728**
*** Total YTD 2003**	**-**	**49**	**1,434**	**9,447**	**8,865**	**174**	**265**	**1,457**
*** Total YTD 2002**	**-**	**63**	**1,896**	**10,985**	**8,890**	**199**	**219**	**1,450**

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* Adjusted for deletions and late reports.

Summary of Reportable Diseases in Ontario - 2nd Quarter 2003

Health Units by Region	Population 2001	Hepatitis A	Hepatitis B	Hepatitis C	Hib	Influenza	Measles	Meningo-coccal
Algoma	117,200		2	15				
North Bay	92,950			6		1		
Northwestern	75,085			7		6		
Porcupine	84,755			5		6		
Sudbury	188,365		4	35		1		2
Thunder Bay	152,800		3	30		8		1
Timiskaming	35,335		1	1				
Total - Northern	**746,490**		**10**	**99**		**22**		**3**
Eastern Ontario	185,975			11		4		
Hastings & Prince Edward	150,805	1		8				
Kingston, Frontenac & Lennox	178,065	1		5		1		
Leeds, Grenville & Lanark	159,100		1	21		5		
Ottawa	774,070	3	1	84		8		1
Renfrew	96,465			4				
Total - Eastern	**1,544,480**	**5**	**2**	**133**		**18**		**1**
Durham	506,900	2				2		1
Haliburton-Kawartha	161,770			38		1		1
Muskoka-Parry Sound	80,500							
Peel	988,950	3		110		9		
Peterborough	125,860		1	25				
Simcoe	377,030			35				1
Toronto - total	2,481,495	7	16	304	2	41	4	1
North		*2*	*1*	*71*	*1*	*9*		
South		*1*	*9*	*118*		*14*	*4*	*1*
East		*2*	*4*	*72*		*14*		
West		*2*	*2*	*43*	*1*	*4*		
York	728,980	3		50		7		
Total - Central East	**5,451,485**	**15**	**17**	**562**	**2**	**60**	**4**	**4**
Grey Bruce	152,380		2	14				
Elgin-St. Thomas	81,560		1	7	1	1		1
Huron	59,695			1				1
Chatham-Kent	107,705			9		1		
Lambton	124,295							
Middlesex-London	403,180	1		49				1
Oxford	99,265			4				
Perth	73,680			2				
Windsor-Essex	374,985	3		37	1			
Total - Southwest	**1,476,745**	**4**	**3**	**123**	**2**	**2**		**3**
Brant	118,085			11		1		
Haldimand-Norfolk	104,580			4				
Halton	375,230	2		20	1	3		
Hamilton	490,270	4	1	84		3		
Niagara	410,570			69		2		1
Waterloo	438,515			40		2		
Wellington-Dufferin-Guelph	238,315	1	1	5		2		
Total - Central West	**2,175,565**	**7**	**2**	**233**	**1**	**13**		**1**
2nd Quarter 2003	**11,394,765**	**31**	**34**	**1,150**	**5**	**115**	**4**	**12**
*** Total YTD 2003**	**-**	**58**	**57**	**2,467**	**6**	**448**	**9**	**27**
*** Total YTD 2002**	**-**	**54**	**61**	**2,699**	**2**	**2,172**		**34**

The Toronto City regions above are now defined as: North - former North York; South - former City of Toronto; West - former Etobicoke and City of York; East - former Scarborough and East York

** Infectious Syphilis cases include 'Primary, Secondary and Early Latent' staging effective January 1, 2003

* Adjusted for deletions and late reports.

Summary of Reportable Diseases in Ontario - 2nd Quarter 2003

Health Units by Region	Population 2001	Mumps	Pertussis	Rubella	Salmon.	Shigellosis	Syphilis Infectious**	TB	VTEC
Algoma	117,200		5						
North Bay	92,950				2				
Northwestern	75,085	1			3		2	2	
Porcupine	84,755				2			4	
Sudbury	188,365		1		1			1	
Thunder Bay	152,800				5			1	1
Timiskaming	35,335				1				
Total - Northern	**746,490**	**1**	**6**		**14**		**2**	**8**	**1**
Eastern Ontario	185,975		5		4	1		2	
Hastings & Prince Edward	150,805		1		5			2	
Kingston, Frontenac & Lennox	178,065				2		1		
Leeds, Grenville & Lanark	159,100		3		5				2
Ottawa	774,070		15	1	31	5	11	12	9
Renfrew	96,465				3			1	1
Total- Eastern	**1,544,480**		**24**	**1**	**50**	**6**	**12**	**17**	**12**
Durham	506,900		5		14	1	1	1	1
Haliburton-Kawartha	161,770				8	1	1	2	1
Muskoka-Parry Sound	80,500		2		1			5	
Peel	988,950		1		41	16	5	51	6
Peterborough	125,860		15		3		1		
Simcoe	377,030		4		5	1		3	
Toronto - total	2,481,495		4		122	18	131	178	20
North			*1*		*28*	*3*	*5*	*42*	*6*
South					*40*	*6*	*111*	*56*	*1*
East			*3*		*24*	*5*	*6*	*51*	*9*
West					*30*	*4*	*9*	*29*	*4*
York	728,980		5		33	3	3	17	5
Total - Central East	**5,451,485**		**36**		**227**	**40**	**142**	**257**	**33**
Grey Bruce	152,380				4				1
Elgin-St. Thomas	81,560		2		2				1
Huron	59,695				2				2
Chatham-Kent	107,705				1				1
Lambton	124,295				3				
Middlesex-London	403,180		5		19				1
Oxford	99,265				2				1
Perth	73,680				4				1
Windsor-Essex	374,985		2		10	1	1	1	
Total - Southwest	**1,476,745**		**9**		**47**	**1**	**1**	**1**	**8**
Brant	118,085				2				
Haldimand-Norfolk	104,580		4		7				
Halton	375,230		1	1	12	1	1	2	71
Hamilton	490,270				16	1	1	10	3
Niagara	410,570		3		34		1	4	6
Waterloo	438,515				13	1	3	4	3
Wellington-Dufferin-Guelph	238,315		1		9	3	2		5
Total - Central West	**2,175,565**		**9**	**1**	**93**	**6**	**8**	**20**	**88**
2nd Quarter 2003	**11,394,765**	**1**	**84**	**2**	**431**	**53**	**165**	**303**	**142**
*** Total YTD 2003**	**-**	**9**	**140**	**5**	**863**	**139**	**165**	**303**	**251**
*** Total YTD 2002**	**-**	**8**	**202**	**1**	**1,040**	**686**	**68**	**398**	**112**

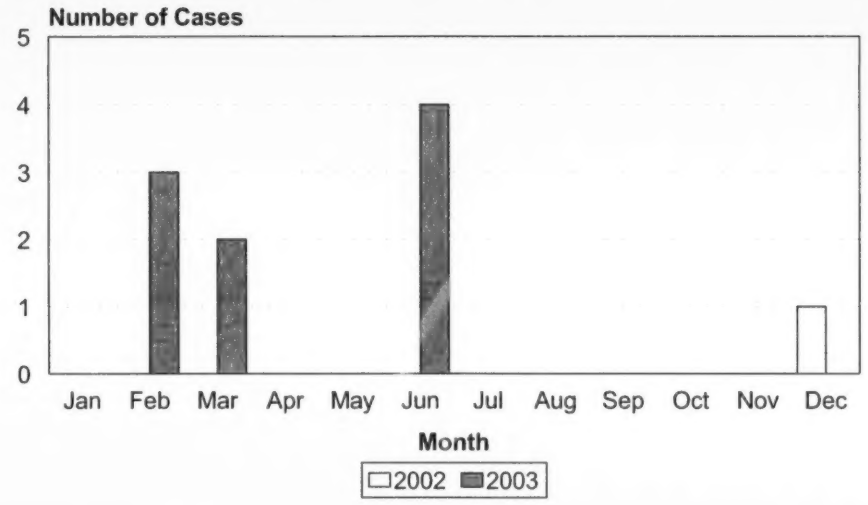
The Toronto City regions above are now defined as: North - former North York; South - former City of Toronto; West - former Etobicoke and City of York; East - former Scarborough and East York

** Infectious Syphilis cases include 'Primary, Secondary and Early Latent' staging effective January 1, 2003

* Adjusted for deletions and late reports.

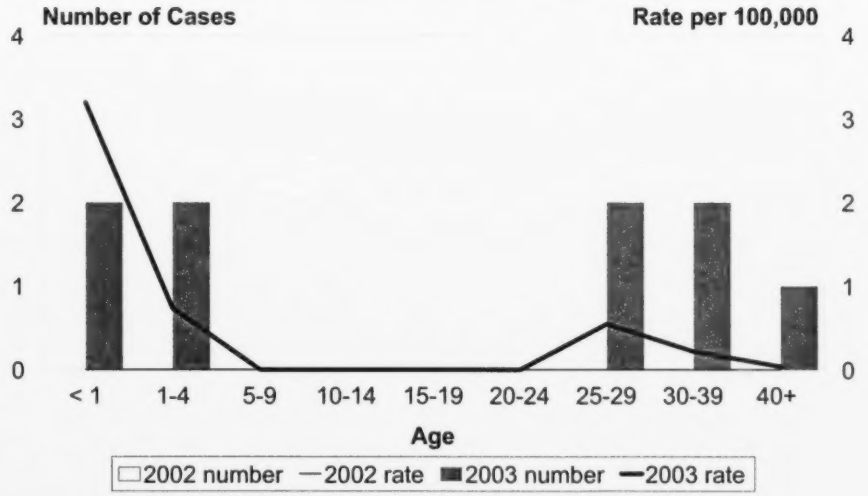
Vaccine Preventable and Other Diseases

Measles by Month
Ontario
January-June, 2002 and 2003



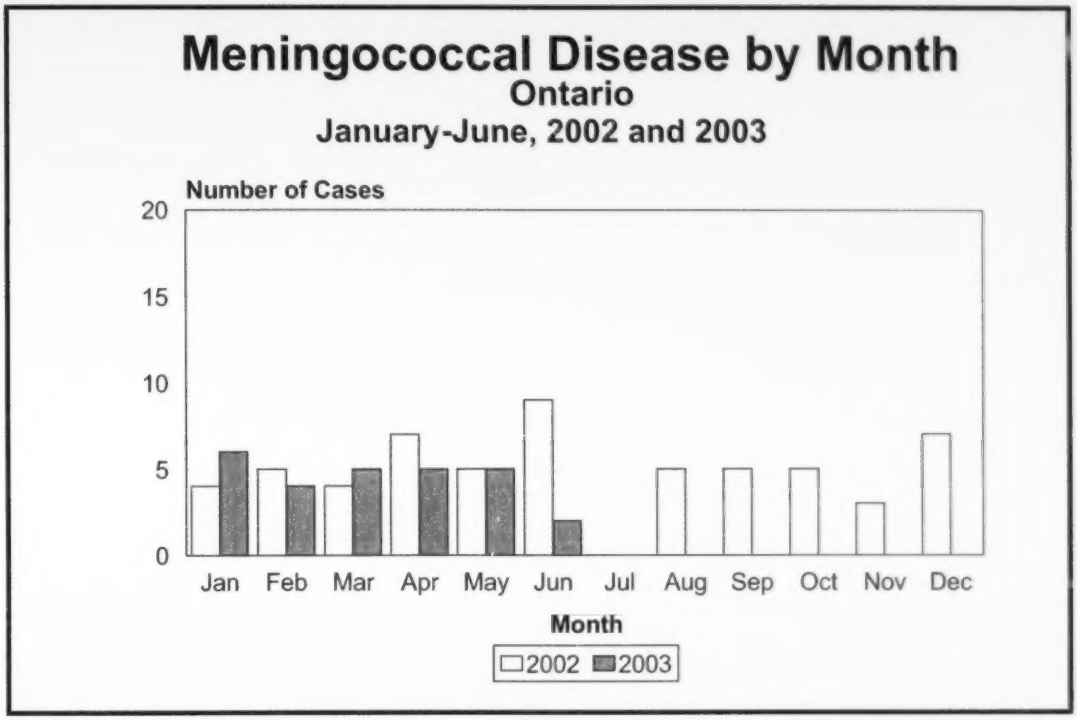
Total for 2002 includes "confirmed" and "probable" cases

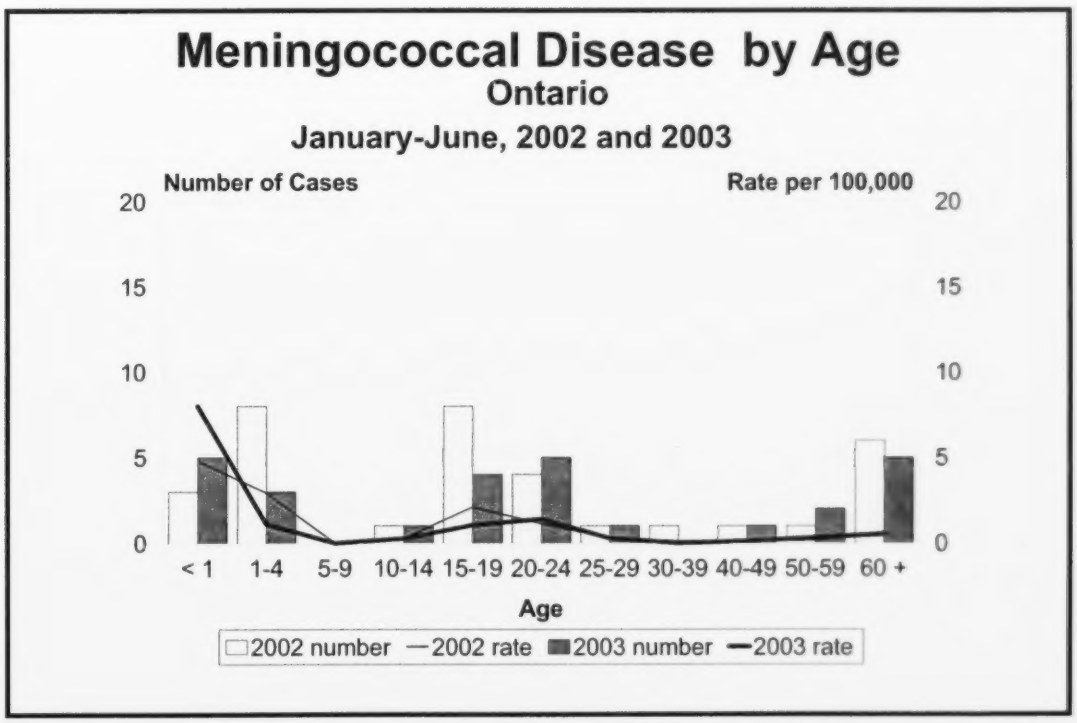
Measles by Age
Ontario
January-June, 2002 and 2003



Total for 2002 includes "confirmed" and "probable" cases

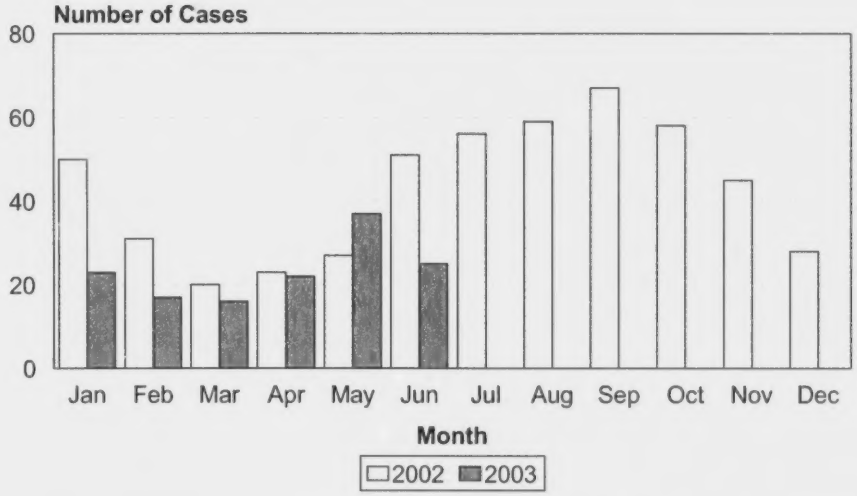
Vaccine Preventable and Other Diseases



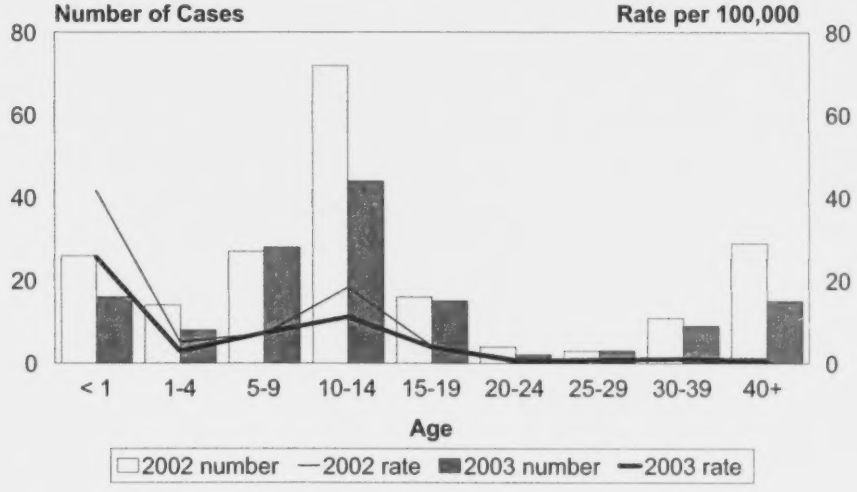


Vaccine Preventable and Other Diseases

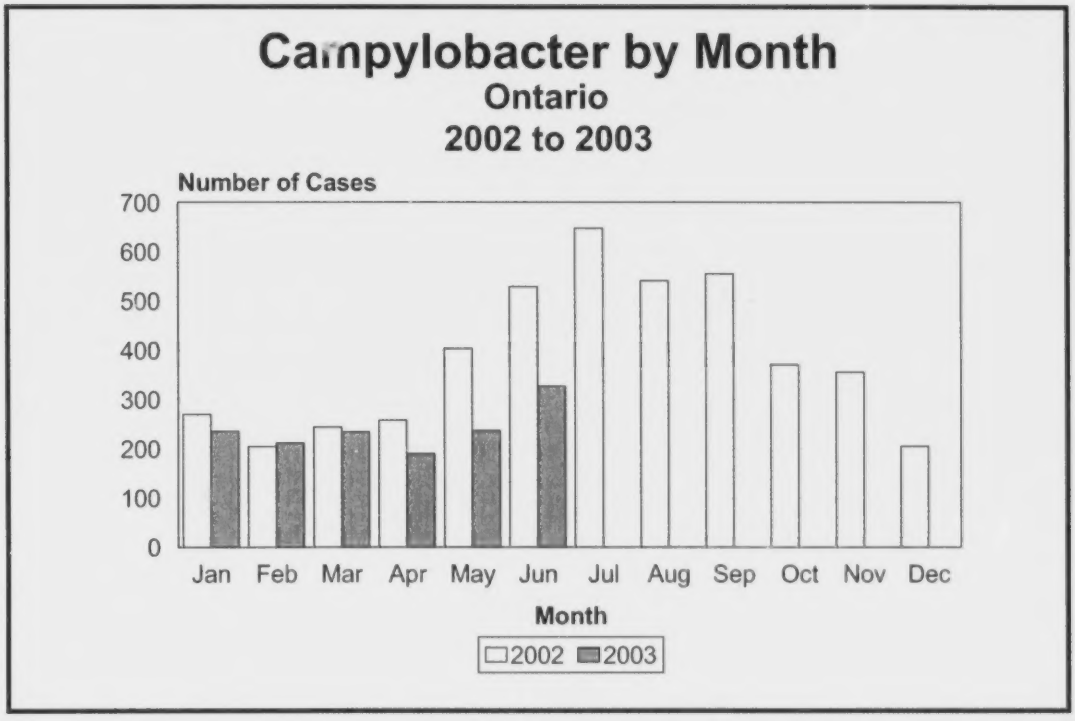
Pertussis by Month
Ontario
January-June, 2002 and 2003

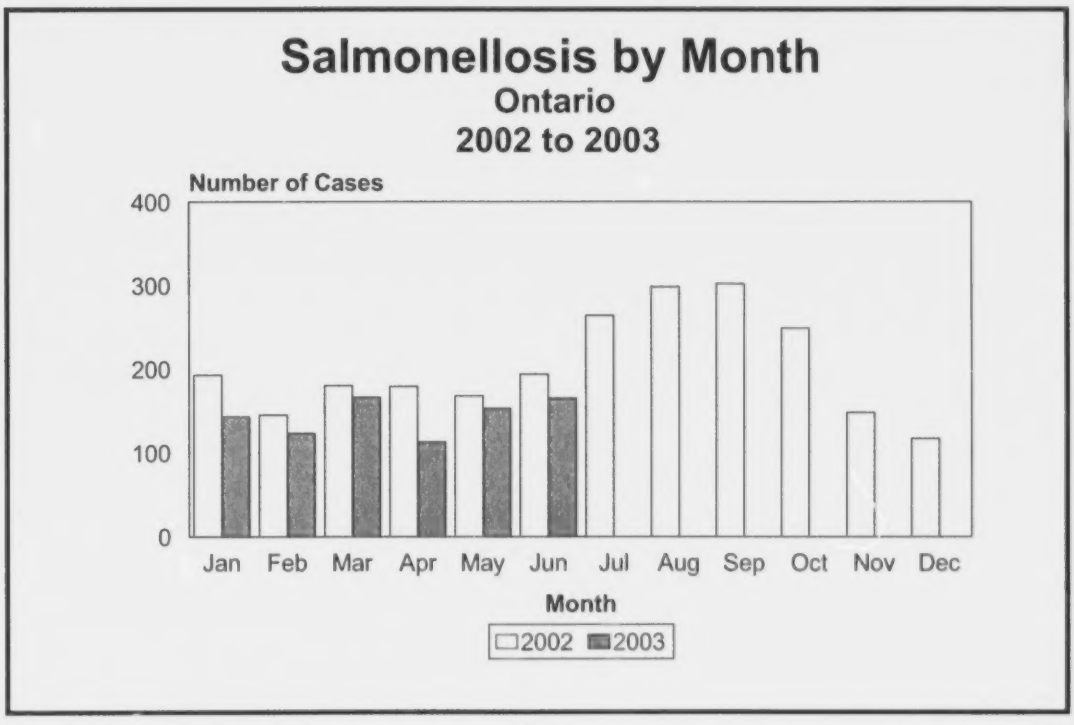


Pertussis by Age
Ontario
January-June, 2002 and 2003



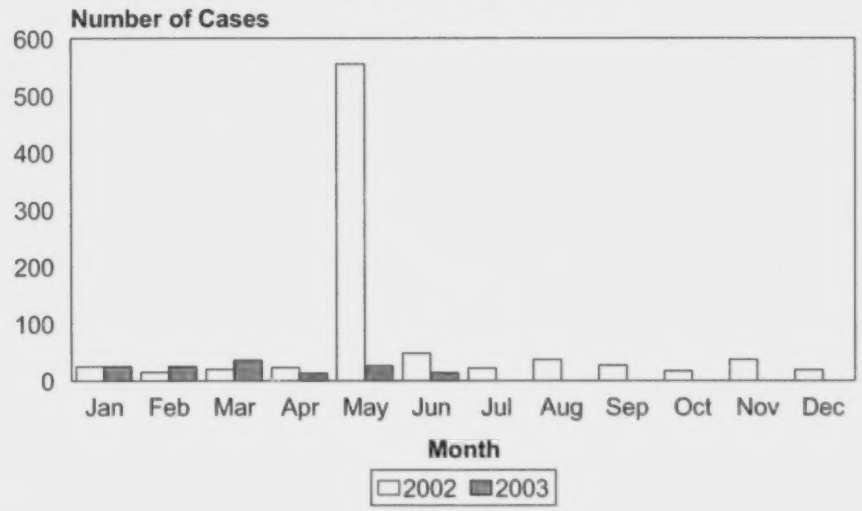
Enteric Diseases



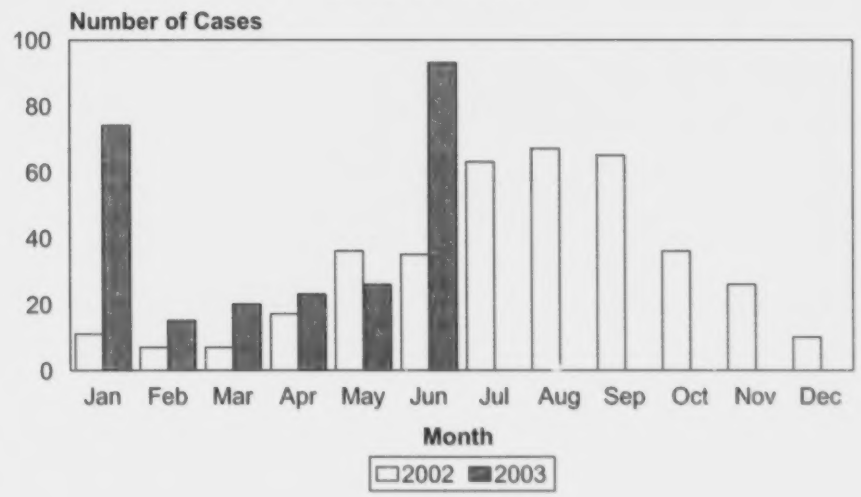


Enteric Diseases

Shigellosis by Month
Ontario
2002 to 2003

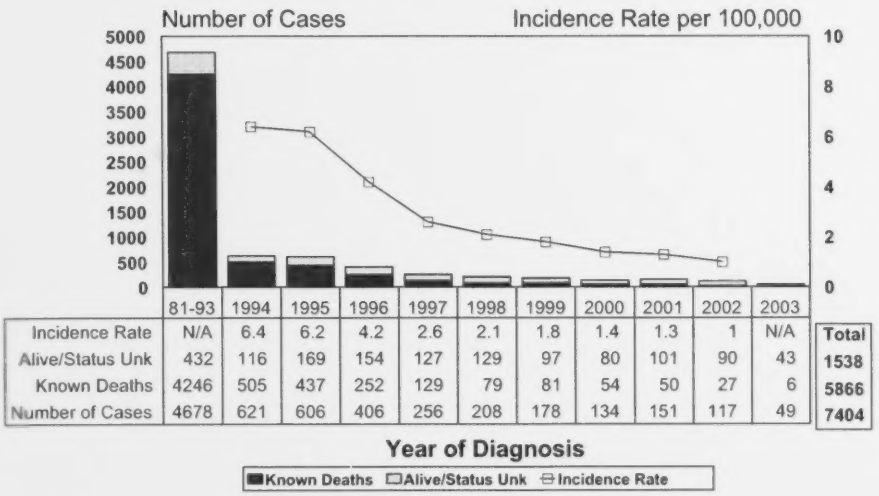


Verotoxin-Producing E. coli Infections
Ontario
2002 to 2003



Sexually Transmitted Diseases

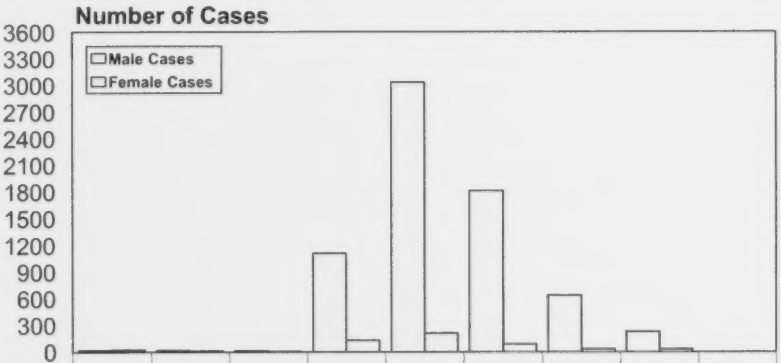
AIDS in Ontario
Incidence by Year of Diagnosis



	81-93	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Incidence Rate	N/A	6.4	6.2	4.2	2.6	2.1	1.8	1.4	1.3	1	N/A	
Alive/Status Unk	432	116	169	154	127	129	97	80	101	90	43	1538
Known Deaths	4246	505	437	252	129	79	81	54	50	27	6	5866
Number of Cases	4678	621	606	406	256	208	178	134	151	117	49	7404

Ministry of Health and Long-Term Care
Public Health Branch
Cumulative cases diagnosed to June 30, 2003

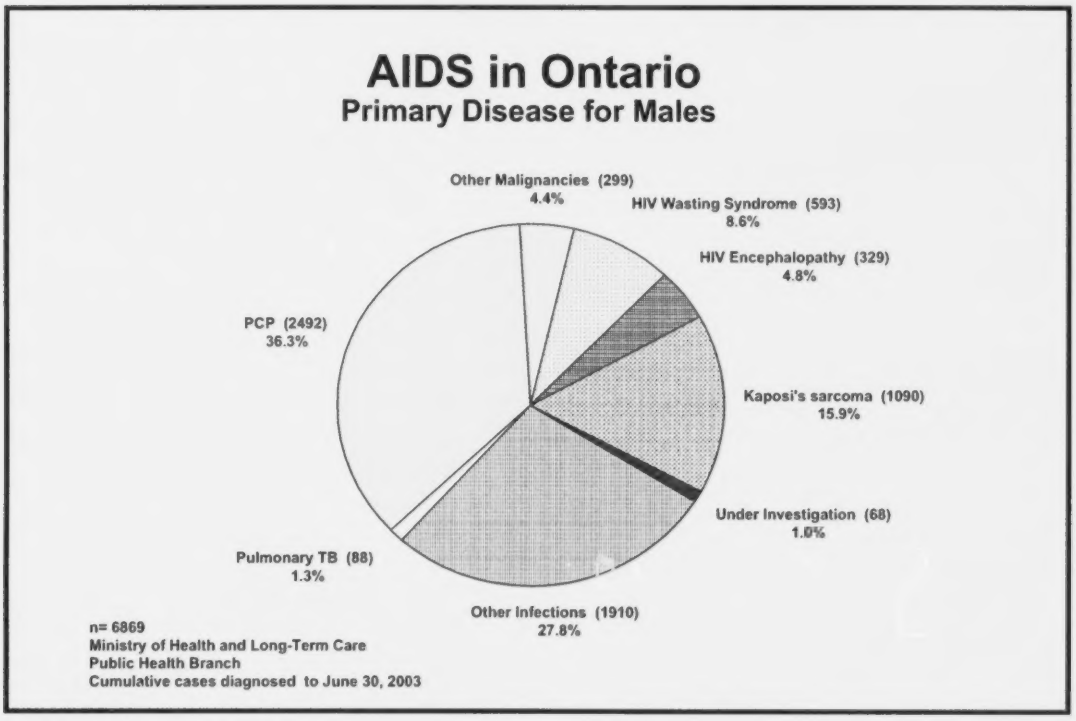
AIDS in Ontario
Cases by Age and Sex

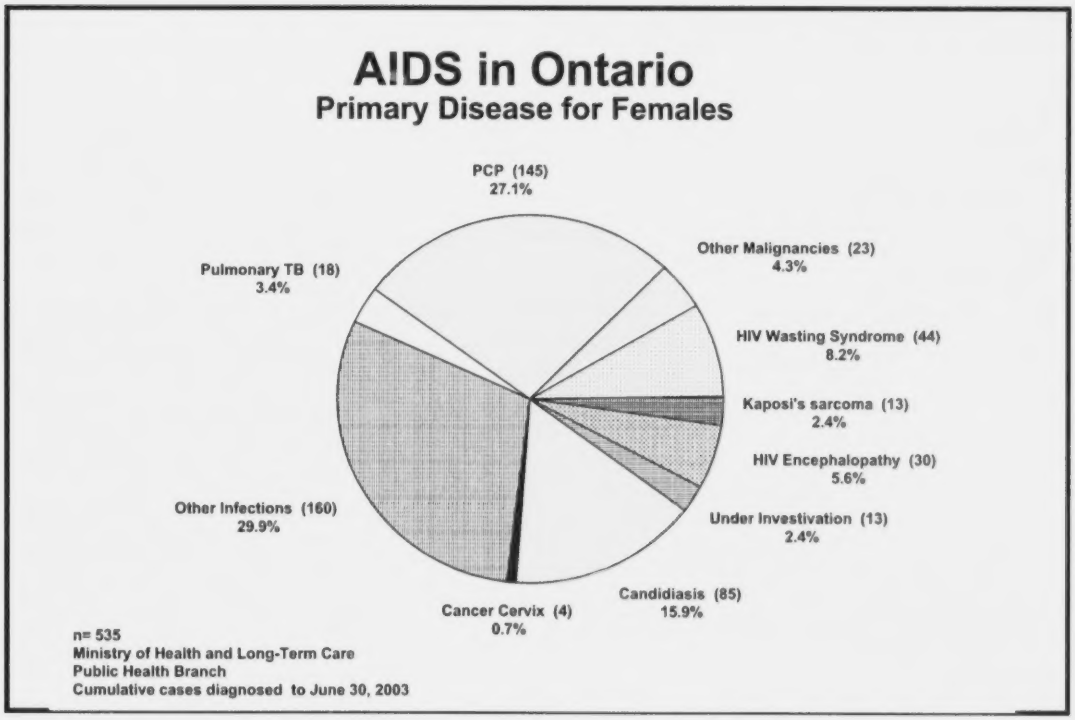


	0<1	1-14	15-19	20-29	30-39	40-49	50-59	60+	Total
Male Cases	19	20	16	1109	3033	1811	635	226	6869
Female Cases	24	11	5	129	210	90	34	32	535
Total Cases	43	31	21	1238	3243	1901	669	258	7404

Ministry of Health and Long-Term Care
Public Health Branch
Cumulative cases diagnosed to June 30, 2003

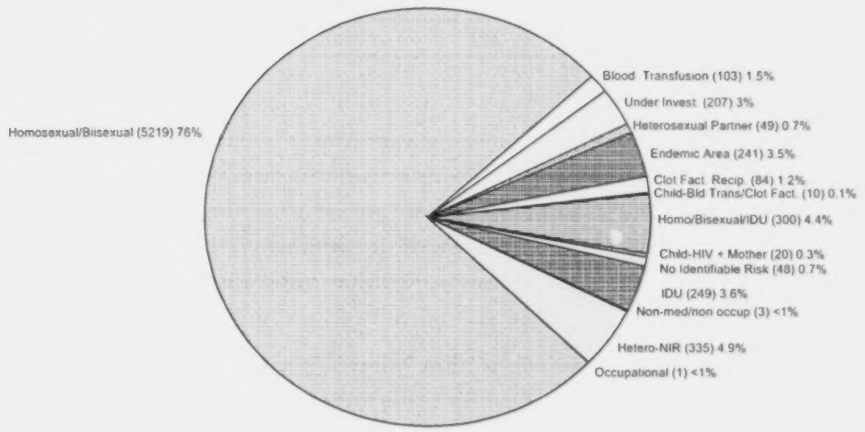
Sexually Transmitted Diseases





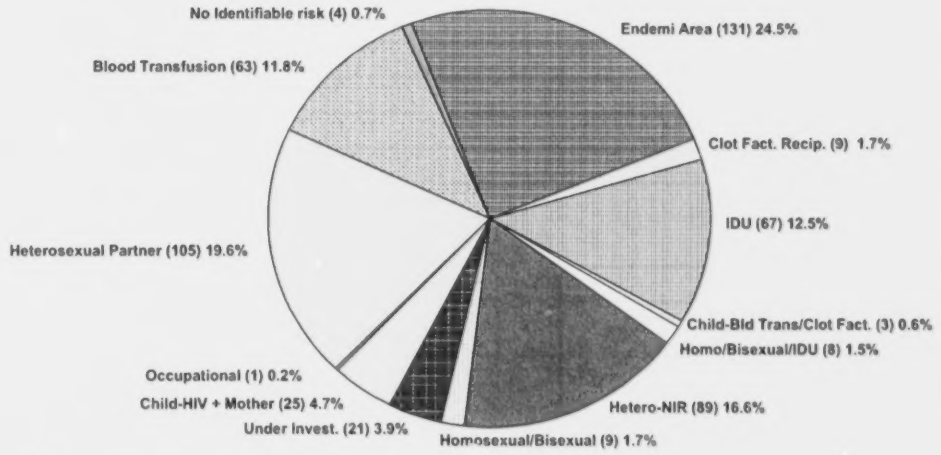
Sexually Transmitted Diseases

AIDS in Ontario
Risk Exposure Categories for Males



n= 6869
Ministry of Health and Long-Term Care
Public Health Branch
Cumulative cases diagnosed to June 30, 2003

AIDS in Ontario
Risk Exposure Categories for Females



n= 535
Ministry of Health and Long-Term Care
Public Health Branch
Cumulative cases diagnosed to June 30, 2003

AIDS in Ontario

Number of Cases per Health Unit Area of Residence at time of Onset/Diagnosis

Responsible Health Unit	Number	Percent
Algoma	12	0.2%
Brant County	33	0.4%
Bruce-Grey-Owen Sound	27	0.4%
Durham Region	112	1.5%
Eastern Ontario	32	0.4%
Elgin-St. Thomas	13	0.2%
Haldimand-Norfolk	21	0.3%
Haliburton, Kawartha	18	0.2%
Halton Region	91	1.2%
Hamilton-Wentworth	210	2.8%
Hastings & Prince Edward	51	0.7%
Huron County	11	0.1%
Kent-Chatham	25	0.3%
Kingston, Frontenac	73	1.0%
Lambton	28	0.4%
Leeds, Grenville & Lanark	28	0.4%
Middlesex-London	237	3.2%
Muskoka-Parry Sound	19	0.3%
Niagara Region	138	1.9%
North Bay & District	31	0.4%
Northwestern	9	0.1%
Ottawa-Carleton Region	621	8.4%
Oxford County	22	0.3%
Peel Region	277	3.7%
Perth District	18	0.2%
Peterborough	35	0.5%
Porcupine	11	0.1%
Renfrew County & District	18	0.2%
Simcoe	82	1.1%
Sudbury and District	68	0.9%
Thunder Bay District	39	0.5%
Timiskaming	9	0.1%
Toronto City - total	4508	60.9%
North	279	3.8%
South	3521	47.6%
East	397	5.4%
West	311	4.2%
Waterloo Region	88	1.2%
Wellington-Dufferin-Guelph	54	0.7%
Windsor-Essex County	202	2.7%
York Region	133	1.8%
Totals	7,404	100.0%

Ministry of Health and Long-Term Care
Public Health Branch
Cumulative cases diagnosed to June 30, 2003

Reportable Disease Summary for First Nations and Inuit Health Branch

Ontario Region, April 1 - June 30, 2003

DISEASE	0 - 4		5 - 9		10 - 14		15 - 19		20 - 24		25 - 29		30 - 39		40 - 49		50 - 59		Over 60		UNK	Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
Campylobacter Enteritis	1																					1
Chickenpox (Varicella)	10	10	5	6	1	1									1							34
Chlamydia Trachomatis Infections						4	14	40	12	28	6	19	9	8		1						141
Gonorrhea							3		1	2	4	1	1	1								13
Group A Streptococcal, invasive																		1				1
Hepatitis C																1						1
Influenza	1	2										1										4
Mumps	1																					1
Tuberculosis													1							2		3

On-Reserve Population for MSB - Ontario Region = 68995